IN THE CLAIMS:

1. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing successive sequences of a plurality of modulation symbols for the data,

providing successive sequences of a plurality of spreading codes for the data ,

each individual one of the sequences of the spreading codes for the data being juxtaposed to an individual one of the sequences of the modulations for the data,

providing a parallel presentation of each individual one of the sequences of modulation[[~~s~~]] symbols for the data and the juxtaposed one of the sequences of spreading codes for the data, and

selecting ~~an~~ successive individual one[[s]] of the plurality of the modulations for the data in each sequence and [[~~an~~]] successive individual one[[s]]of the plurality of the spreading codes in the juxtaposed sequence for the data.

2. (Currently amended) A method as set forth in claim 1, including the step of

combining the successive selected one[[s]] of the modulations for the data in each sequence on a reiterative basis and the successive selected one[[s]] of the plurality of spreading codes for the data in the juxtaposed sequence on a reiterative basis.

3. (Currently amended) A method as set forth in claim 2, including the step of:

transmitting to the receiver the combination[[s]] of the successive selected one[[s]] of the modulations for the data in each sequence on the reiterative basis and the successive selected one[[s]] of the spreading codes for the data in the juxtaposed sequence on the reiterative basis.

4. (Original) A method as set forth in claim 3 wherein

the modulations are selected from a group consisting of QAM, SQAM and QPSK and wherein

the spreading codes in each sequence are at different rates.

5. (Currently amended) A method as set forth in claim 2 wherein

the combination of each of the successive selected one[[s]] of the modulations in each sequence and each of the successive selected one[[s]] of the spreading codes in the juxtaposed sequence constitutes the product of the selected one[[s]] of the modulations and the selected one[[s]] of the spreading codes.

6. (Currently amended) A method of transmitting ~~information~~ data from a transmitter to a receiver, including the steps of:

providing input signals,

mapping the input signals with a number of binary bits,

modulating the input signals from the mapper with reiterative sequences of M modulations where M indicates a number of different modulations,

providing reiterative spreading code sequences each having N spreading codes where N indicates a number of different spreading codes,

the number of binary bits in the mapper providing for a number of different values at least equal to the product of M and N, and

selecting each successive one of the M modulations in each modulation sequence on a reiterative basis and each successive one of the N spreading codes in each spreading code sequence on a reiterative basis.

7. (Currently amended) A method as set forth in claim 6, including the step of:

selecting each successive one of the M modulations simultaneously with each successive one of the N spreading codes, and

combining ~~the selected~~ one of the M modulations in each modulation sequence on the reiterative basis and ~~the selected~~ one of the N spreading codes in each spreading code sequence on the reiterative basis.

8. (Currently amended) A method as set forth in claim 6, including the steps of:

multiplying ~~the selected~~ each successive one of the M modulations in each modulation sequence on the reiterative basis and ~~the selected~~ each successive one of the N spreading ~~factors~~ codes in each spreading code sequence on the reiterative basis, and

transmitting the multiplied ~~signals~~ modulation and spreading factors in each sequence to the receiver.

9. (Currently amended) A method as set forth in claim 6, including the steps of:

providing ~~alternate~~ the successive ones of the ~~sequences of the~~ M modulations and the ~~sequences~~ successive ones of the N spreading codes in each successive one of the N spreading code sequences,

presenting in parallel the M modulations in each successive one of the modulation sequence[[s]] and the N spreading codes in ~~the alternate~~ each successive one of the spreading code sequences, and

selecting one of the M modulations and one of the N spreading codes in each parallel presentation.

10. (Currently amended) A method as set forth in claim 9, including the steps of:

multiplying, in each parallel presentation, the selected one of the M modulations in each successive one of the M modulation sequences and the selected one of the N spreading ~~factors~~ codes in each ~~parallel presentation~~ successive one of the N spreading code sequences, and

transmitting to the receiver[[,]] in each parallel presentation, the multiplied combination of the selected one of the M modulations in each successive one of the M modulation sequences and the selected one of the N spreading codes in each ~~parallel presentation~~ successive one of the N spreading code sequences.

11. (Original) A method as set forth in claim 10 wherein

the M modulations are selected from a group consisting of QAM, SQAM and QPSK modulations and wherein

the N spreading codes in each sequence are at different rates.

12. (Currently amended) A method of transmitting ~~information~~ data from a transmitter to a receiver, including the steps of:

providing a channel encoding of the information data,

providing a mapping of the channel encoded data,

providing a plurality of modulations of the mapped data,

providing a plurality of spreading codes,

selecting an individual one of the data modulations and an individual one of the spreading codes,

combining the selected one of the data modulations and the selected one of the spreading codes, and

transmitting the combination of the selected one of the data modulations and the ~~individual~~ selected one of the spreading codes to the receiver.

13. (Currently amended) A method as set forth in claim 12 wherein

the data modulations ~~in the plurality~~ are produced in a sequence and the spreading codes ~~in the plurality~~ are produced in a sequence and wherein

sequences of the data modulations and sequences of the spreading codes are alternately provided and wherein

individual sequences of the data modulations and the alternately provided sequences of the spreading codes are paired in parallel and wherein

an individual one of the data modulations and an individual one of the spreading codes in each parallel pair of sequences are selected for combination.

14. (Currently amended) A method of transmitting and receiving ~~modulated~~ data, including the steps of:

providing data modulations in sequences each having M ~~different~~ data modulations where M indicates the number of data modulations in each sequence,

providing spreading codes in sequences each having N ~~different~~ spreading codes where N indicates the number of spreading codes in each sequence, the sequences of the N spreading codes being provided alternately with the sequences of the M data modulations,

selecting an individual one of the M data modulations values in each sequence of the data modulations,

selecting an individual one of the N spreading codes in each spreading code sequence, and

combining the selected one ~~of the M values in each sequence~~ of the [[M]] data modulations in each sequence and the selected one of the N spreading codes ~~in the next alternate of the~~ in each sequence ~~of the spreading codes~~.

15. (Currently amended) A method as set forth in claim 14 wherein the combination of the selected one of the M data modulations in each sequence of the data modulations and the selected one of the N spreading codes in the next alternate one of the spreading code sequences is transmitted from the transmitter to the receiver.

16. (Currently amended) A method as set forth in claim 14, including the steps of:

providing at the receiver ~~stages for receiving~~ successive combinations of the selected one[[s]] of the M ~~different~~ data modulations in each data modulation[[s]] sequence and the selected one[[s]] of the N ~~different~~ spreading codes in each alternate sequence of the spreading codes, and

~~introducing to the receiver stages the received combinations of the selected one of the M data modulations values in each sequence of the data modulations and the selected one of the N spreading codes in each alternate sequence of the spreading codes to obtain an identification~~ identifying ~~of~~ the ~~received~~ combinations received at the receiver of the selected ones of the M data modulations in each data modulation sequence and the selected ones of the N spreading codes in each alternate sequence of the spreading codes.

17. (Original) A method as set forth in claim 16, including the step of:

demodulating the data modulations in each received combination after the identification of the received combination.

18. (Original) A method as set forth in claim 16, the step of:

despreading the spreading code in each received combination after the identification of the received combination.

19. (Currently amended) A method as set forth in claim 16 wherein

each combination of the selected data modulation and the selected spreading code is subjected to correlation factors to identify the combination and wherein

the spreading code in each received combination is despread after the identification of the received combination and wherein

each received combination of the modulated data and the spreading code is demodulated after being despread.

20. (Currently amended) A method as set forth in claim 18 wherein

each combination of the selected data modulation and the selected spreading code is passed through a plurality of matching filters, each having individual characteristics, to identify the characteristics of the combination in accordance with the characteristics of the filter through which the combination passes and wherein

the spreading code in each received combination is despread after the identification of the combination and wherein

each received combination of the selected data modulation and the selected spreading code is demodulated after being despread.

21. (Currently amended) In a method of receiving and processing data from a transmitter, the steps of:

receiving at a receiver signals transmitted from the transmitter and constituting a combination of a selected one of M data modulations in a data modulation sequence and a selected one of N spreading codes in a spreading code sequence where M indicates the number of data modulations in the data modulation sequence and N indicates the number of the spreading codes in the spreading code sequence,

identifying, from the different combinations of the M ~~available~~ data modulations in the data modulation sequence and the N ~~available~~ spreading codes in the spreading code sequence,

the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence, and

despreading and demodulating the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence.

22. (Currently amended) In a method as set forth in claim 21 wherein

correlation techniques are used to identify, from the ~~different ones of the~~ combinations of the M data modulations in the data modulation sequence and the different ones of the N spreading codes in the spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence.

23. (Currently amended) In a method as set forth in claim 21 wherein

matched filter techniques are used to identify, from the combinations of the ~~different ones of the~~ M data modulations in the data modulation sequence and the ~~different ones of the~~ N spreading codes in the spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading code[[s]] ~~he~~ in the spreading code sequence.

24. (Currently amended) In a method as set forth in claim 22 wherein

~~in the correlation technique,~~ the received data is multiplied by each individual one of the N spreading codes in the correlation techniques and wherein

the individual ones of the products are integrated with time and wherein

the individual ones of the integrated products are squared and wherein

the combination of the selected one of the M data modulations in each data modulation ~~data~~ sequence and the selected one of the M spreading code in each spreading code sequence is identified by the highest value in the squaring of the integrated products.

25. (Currently amended) A method of transmitting data from a transmitter to a receiver, including the steps of:

encoding data in accordance with instructions from the receiver,

puncturing the data in accordance with instructions from the receiver,

interleaving the punctured data,

modulating the interleaved punctured data with a selected one of M data modulations in each data modulation sequence in accordance with instructions from the receiver,

spreading the modulated interleaved punctured data by a ~~particular spreading code~~ selected one of N spreading codes in each spreading code sequence in accordance with instructions from the receiver, ~~and~~

combining the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading case sequence, and

transmitting to the receiver the modulated interleaved punctured data spread by the particular spreading code of the combination of the selected one of the M modulated data and the selected one of the N spreading codes.

26. (Currently amended) A method as set forth in claim 25 wherein

~~the modulations are in sequences with M data modulations in each modulation sequence and wherein~~

the spreading codes are in sequences each having N spreading codes and wherein

an individual one of the M modulations is selected in each data modulation sequence and wherein

the spreading code sequences alternate with the modulation sequences and wherein

an individual one of the N spreading codes is selected in each spreading code sequence and wherein

the selected one of the M data modulations in each modulated data sequence and the selected one of the N spreading codes in each spreading code sequence are combined and wherein

the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each alternate spreading code sequence ~~are~~ is transmitted to the receiver.

27. (Currently amended) A method as set forth in claim 26 wherein

the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence are disposed in parallel to obtain the combination and wherein

the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each alternate spreading code sequence is provided by multiplying the selected one of the M data modulations and the selected one of the N spreading codes.

28. (Original) A method as set forth in claim 26 wherein

the M data modulations in each data modulation sequence and the N spreading codes in each alternate spreading code sequence are provided in parallel and wherein

the selected one of the M data modulations and the selected one of the N spreading codes are selected with the M data modulations and the N spreading codes in parallel.

29. (Currently amended) A method of transmitting data and receiving the data at a receiver, including the steps of:

providing the data at the transmitter,

providing a sequence of M data modulations in accordance with instructions from the receiver where M indicates the number of the data modulations in the sequence,

providing a sequence of N spreading codes in accordance with instructions from the receiver where N indicates the number of the spreading codes in the sequence,

alternately providing the sequences of the M data modulations and the sequences of the N spreading codes,

pairing in parallel successive ones of the sequences of the M data modulations and the ~~alternate~~ sequences of the N spreading codes,

selecting from each parallel pair an individual one of the M data modulations and an individual one of the N spreading codes,

~~combining~~ obtaining the product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair, and

transmitting to the receiver the ~~combination~~ product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair.

30. (Currently amended) A method as set forth in claim 29, including the steps of

receiving at the receiver the ~~combination~~ product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair, and

identifying the ~~combination~~ product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair.

31. (Currently amended) A method as set forth in claim 30, including the step of:

demodulating at the receiver the selected one of the M data modulations , in each identified ~~combination~~ product, in accordance with instructions from the receiver[[,]] to recover the data in the ~~combination~~ product.

32. (Currently amended) A method as set forth in claim 30, including the step of:

despreading at the receiver the individual one of the N spreading codes in each identified ~~combination~~ product, in accordance with instructions from the receiver, to recover the data in the ~~combination~~ product.

33. (Original) A method as set forth in claim 29, including the step of:

encoding the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated.

34. (Currently amended) A method as set forth in claim 30, including the steps of,

encoding the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated and is ~~provided~~ combined with the spreading code to obtain the product, and

decoding the received ~~combination~~ product of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair after the demodulation and despreading of the data.

35. (Currently amended) A method as set forth in claim 29, including the step of:

puncturing the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated and ~~provided~~ combined with the spreading code to obtain the product.

36. (Currently amended) A method as set forth in claim 29, including the step[[s]] of:

puncturing the data at the transmitter, in accordance with instructions from the receiver, to delete particular data before the data is modulated and ~~provided~~ combined with the spreading code to obtain the product, and

depuncturing the data at the receiver, in accordance with the instructions from the receiver, to restore the data punctured at the transmitter.

37. (Currently amended) A method as set forth in claim 30, including the steps of:

puncturing the data at the transmitter[[,]] in accordance with instructions from the receiver, to delete particular data before the data is modulated and ~~provided~~ combined with [[a]] the spreading code to obtain the product,

despreading at the receiver the identified ~~combination~~ product in each parallel pair of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel pair,

demodulating at the receiver the despread data at the receiver, and

re-inserting at the receiver the punctured data into the demodulated data to recover the data.

38. (Currently amended) A method as set forth in claim 29, including the steps of:

puncturing the data at the transmitter, in accordance with instructions from the receiver, before the data is modulated and ~~provided~~ combined with the spreading code to obtain the product, and

interleaving the punctured data at the transmitter before the data is modulated and ~~provided~~ combined with the spreading code to obtain the product.

39. (Currently amended) A method as set forth in claim 30, including the steps of;

puncturing the data at the transmitter, in accordance with instructions from the receiver, to delete particular data before the data is modulated and is ~~provided~~ combined with the spreading code to obtain the product,

interleaving the punctured data at the transmitter before the data is modulated and ~~provided~~ combined with the spreading code to obtain the product and after the data is punctured,

de-interleaving the punctured data at the receiver after the selected one of the M data modulations and the selected one of the [[~~M~~]] [[N]] spreading codes in each parallel pair has been identified,

re-inserting the punctured data, in accordance with the instructions from the receiver, before the decoding of the data but after the de-interleaving of the data.

40. (Currently amended) A method as set forth in claim 39, including the steps of:

despreading at the receiver the selected one of the N spreading codes in each identified combination, in accordance with instructions from the receiver, to recover the data in the ~~combination~~ product, and

demodulating at the receiver the selected one of the M data modulations in each identified combination, in accordance with instructions from the receiver, to recover the data in the ~~combination~~ product.

41. (Currently amended) In a method of receiving and processing data from a transmitter, the steps of:

receiving at a receiver from the transmitter modulated interleaved punctured data, spread by a particular spreading code, received by the receiver from the transmitter,

de-spreading the received data in accordance with instructions provided by the receiver to the transmitter to obtain the spreading of the data at the transmitter, the modulated interleaved punctured data constituting a product of modulated data selected from M data modulations and a spreading code selected from N spreading codes where M is the number of the data modulations and N is the number of the spreading codes,

demodulating the modulated data in accordance with instructions provided by the receiver to the transmitter to modulate the data at the transmitter,

de-interleaving the demodulated data,

re-inserting the punctured data into the de-interleaved data in accordance with instructions provided by the receiver to the transmitter to obtain the puncturing of the data at the transmitter, and

decoding the data, after the re-insertion of the punctured data into the de-interleaved data ~~in accordance with instructions provided by the receiver to the transmitter~~, to recover the data.

42. (Currently amended) In a method as set forth in claim 41 wherein the data received at the receiver from the transmitter constitutes a combination of a selected one of M data modulations ~~values~~ in a data modulation sequence and a selected one of N spreading codes in a spreading code sequence where M is the number of the data modulations in the data modulation sequence and N is the number of the spreading codes in the spreading code sequence, the step of:

identifying, from the M data modulations in each data modulation sequence and the N spreading codes in each spreading code sequence, the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence, the identification occurring before the demodulation and the de-spreading of the received data.

43. (Currently amended) ~~In combination in~~ [[a]][[A]]pparatus for transmitting data from a transmitter to a receiver[[,]] including:

a bus for providing successive sequences of M data modulations and N spreading codes including where M is the number of the data modulations in each data modulation sequence and N is the number of the spreading codes in each spreading code sequence,

a converter for converting each of the successive sequences of the M data modulations and the N spreading codes to a parallel presentation of the M data modulations in each sequence and the N spreading codes in the ~~juxtapose~~ successive sequence,

a first selector for selecting an individual one of the M data modulations in each of the parallel presentations,

a second selector for selecting an individual one of the N spreading codes in each of the parallel presentations,

a multiplier for combining the individual one of the M data modulations in each parallel presentation and the individual one of the N spreading codes in the parallel presentation, and

a transmitter for transmitting the combination of the selected one of the M data modulations and the selected one of the spreading codes in each of the parallel presentations.

44. (Currently amended) ~~In a combination~~ Apparatus as set forth in claim 43, including

an encoder for encoding the successive sequences of the data before the modulation of the data with the M data modulations and before the spreading of the modulated data with the N spreading codes[[,]]

~~the converter being responsive to successive coded sequences of the M data modulations and the N spreading codes~~.

45. (Currently amended) ~~In a combination~~ Apparatus as set forth in claim 43, including

an interleaver for interleaving the encoded data.

46. (Currently amended) ~~In a combination~~ Apparatus as set forth in claim 43, including

~~the~~ [[a]] stage for puncturing the data in the successive sequences in accordance with instructions from the receiver before the introduction of the M data modulations and the N spreading codes to the ~~data~~ converter.

47. (Currently amended) ~~In a combination~~ Apparatus are as set forth in claim 43, including the M data modulations introduced to the converter in each sequence being provided in accordance with instructions from the receiver,

the N spreading codes introduced to the ~~receiver~~ converter in each sequence being provided in accordance with instructions from the receiver.

48. (Currently amended) ~~In a combination~~ Apparatus as set forth in claim 43, including a stage for interleaving the data in the successive sequences in accordance with instructions from the receiver before the introduction of the M modulations and the N spreading codes to the ~~data~~ converter.

49. (Currently amended) ~~In a combination~~ Apparatus as set forth in claim 43, including

the modulator modulating the data with sequences of M data modulations in accordance with instructions from the receiver,

the code spreader spreading the data ~~in accordance~~ with sequences of N spreading codes in accordance with instructions from the receiver,

the modulator and the code spreader being operative before the ~~selecting~~ selections operations provided by the first and second selectors.

50. (Currently amended) ~~In a combination~~ Apparatus as set forth in claim 44, including

a stage for puncturing the data in the successive sequences before the introduction of the M modulations and the N spreading codes to the ~~data~~ converter,

a stage for interleaving the data in the successive sequences before the introduction of the M modulations and the N spreading codes to the ~~data~~ converter,

a modulator for modulating the data ~~with~~ in the sequences of the M modulations in accordance with instructions from the receiver,

a code spreader for spreading the data in ~~accordance with~~ the sequences of the [[~~M~~]][[N]] spreading ~~combination product~~ codes in accordance with instructions from the receiver,

the modulator and the code spreader being operative before the ~~selecting~~ selections ~~operations~~ provided by the first and second selectors, and

[[~~a~~]] the transmitter being operative to transmit ~~for transmitting~~ the combination of the selected one of the M data modulations and the selected one of the N spreading codes in each of the successive sequences.

51. (Currently amended) Apparatus for transmitting data from a transmitter to a receiver, including,

an encoder for providing coded channels identifying relative locations of the data,

a modulator for providing sequences of M data modulations in accordance with instructions from the receiver where M is the number of the data modulations in each sequence,

a code spreader for providing sequences of N spreading codes in accordance with instructions from the receiver where N is the number of the spreading codes in each sequence and where the sequences of the N spreading codes are juxtaposed to the sequences of the M data modulations,

a converter for converting each of the successive encoded sequences of the M modulated data and the juxtaposed sequence of the N spreading codes to a parallel relationship,

a[[~~s~~]] first selector of an individual one of the M modulated data in each sequence,

a second selector of an individual one of the N spreading codes in the juxtaposed sequence, and

a stage for combining the selected one of the M data modulations in each sequence and the selected one of the N spreading codes in the juxtaposed sequence to produce resultant signal[[s]], and

a stage for transmitting the resultant signal[[s]] in each sequence to the receiver.

52. (Currently amended) Apparatus as set forth in claim 51, including

a stage for removing particular ones of the data sequences, before the modulation of the data with the M data modulations and before the spreading of the data ~~in accordance~~ with the N spreading codes, in accordance with instructions from the receiver.

53. (Currently amended) Apparatus as set forth in claim 51, including,

a stage for interleaving the data in the sequences before the modulation of the data with the M data modulations and before the spreading of the data ~~in accordance~~ with the N spreading codes.

54. (Currently amended) Apparatus as set forth in claim 51, including,

a converter for converting the M data modulations in each sequence and the [[~~M~~]] [[N]]spreading codes in the juxtaposed sequence to a parallel presentation,

the first and second selector[[s]], being operative after the conversion of the M data modulations in each sequence and the conversion of the N spreading codes in the juxtaposed sequence to the parallel presentation.

55. (Currently amended) Apparatus for providing a transmission of data from a transmitter to a receiver, including

a bus for providing data,

a modulator for modulating the data with sequences of M data modulations where M is the number of the data modulations in each sequence, and

a spreader for spreading the modulated data with sequences of [[~~M~~]] N spreading codes where N is the number of the spreading codes in each sequence,

a converter for converting the M data modulations in each sequence and the N spreading codes in ~~the juxtaposed~~ each sequence to a parallel presentation where each sequence of the M data modulations is juxtaposed with an individual one of the sequences of the N spreading codes,

a first selector for selecting an individual one of the M data modulations in each parallel presentation,

a second selector for selecting an individual of the N spreading codes in each parallel ~~ion~~ presentation, and

a stage for combining the selected one of the data modulation[[s]] in each parallel presentation and the selected one of the N spreading codes in the parallel presentation.

56. (Currently amended) Apparatus as set forth in claim 55 wherein

the M data modulations in each sequence are provided in accordance with instructions from the receiver and wherein

the N spreading codes in each juxtaposed sequence are provided in accordance with instructions from the receiver and wherein

the combination of the selected one of the data modulations in each parallel presentation and the selected one of the N spreading codes in the parallel presentation constitutes the product of the data modulation and the spreading code.

57. (Original) Apparatus as set forth in claim 55, including

a transmitter for transmitting to the receiver the combination of the selected one of the M data modulations and the selected one of the N spreading codes in each parallel presentation.

58. (Original) Apparatus as set forth in claim 55 wherein

a puncturer is provided to remove data in the sequences, before the modulation of the data with the M data modulations in each sequence and before the spreading of the data with the N spreading codes in the juxtaposed sequence, in accordance with instructions from the receiver.

59. (Original) Apparatus as set forth in claim 55 wherein

an encoder provides channel coding to the data in the sequences before the modulation of the data with the M modulations and before the spreading of the data with the N spreading codes.

60. (Currently amended) Apparatus as set forth in claim 5[[~~5~~]][[6]] wherein

the M data modulations in each sequence are provided in accordance with instructions from the receiver and wherein

the N spreading codes in each sequence are provided in accordance with instructions from the receiver and wherein

a puncturer is provided to remove data in the sequences, before the modulation of the data in each sequence with the M data modulations and before the spreading of the data in the juxtaposed sequence with the N spreading codes, in accordance with instructions from the receiver and wherein

an encoder provides channel coding to the data in the sequences before the modulation of the data in each sequence with the M data modulations and before the spreading of the data in the juxtaposed sequence with the N spreading codes.

61. (Currently amended) Apparatus for receiving and processing data from a transmitter, including

a bus for receiving transmitted data representing a combination of an individual one of M data modulations in a sequence and N spreading codes in a sequence juxtaposed to the sequence

of the M data modulations where M is the number of the data modulations in the sequence and N is the number of the spreading codes in the sequence,

a plurality of filters disposed in a parallel relationship, each of the filters providing characteristics corresponding to a combination of a selective one of the M data modulations in the sequence and a selective one of the N spreading codes in the sequence and each operative to receive the data on the bus and to provide an output dependent upon the matching between the characteristics of the filter and the characteristics of the data on the bus, and

a comparator responsive to the output of the matched filters for comparing the magnitude of the outputs from the matched filters in the plurality to select the output with the highest magnitude.

62. (Original) Apparatus as set forth in claim 61 wherein the data has been spread by the N spreading codes in the sequence in accordance with instructions from the receiver; the apparatus including:

a de-spreader at the receiver for removing the spreading codes in the data.

63. (Original) Apparatus as set forth in claim 61 wherein the data has been modulated by the M data modulations in the sequence in accordance with instructions from the receiver, the apparatus including:

a demodulator at the receiver for removing the modulations in the data modulation[[s]].

64. (Original) Apparatus as set forth in claim 61 wherein the data has been punctured in a particular pattern at the transmitter, in accordance with instructions from the receiver, to eliminate portions of the data, the apparatus including:

a de-puncturer for restoring at the receiver the portions of the data eliminated at the transmitter.

65. (Original) Apparatus as set forth in claim 61 wherein the data has been interleaved at the transmitter,

the apparatus including

a de-interleaver for de-interleaving the data.

66. (Original) Apparatus as set forth in claim 61 wherein the data has been encoded at the transmitter to identify the channels in which the data is provided[[÷]][[.]]

the apparatus including:

a decoder at the receiver for eliminating the channel coding.

67. (Currently amended) Apparatus as set forth in claim [[~~62~~]][[84]] wherein the data has been modulated at the transmitter by the M data modulations in the sequence in accordance with instructions from the receiver and wherein the data has been interleaved at the transmitter and wherein the data has been punctured at the transmitter in accordance with instructions from the receiver and wherein the data has been spread by the N spreading codes in the sequence in accordance with instructions from the receiver the apparatus including[[;]][[:]]

a despreader at the receiver for removing the spreading codes in the data,

a demodulator at the receiver for demodulating the M data modulations,

a de-interleaver at the receiver for de-interleaving the data,

a de-puncturer at the receiver for depuncturing the data, and

a decoder for at the receiver for decoding the encoded data.

68. (Currently amended) Apparatus for receiving data from a transmitter, including

a bus for receiving transmitted data representing a combination of an individual one of M data modulations in a sequence and N spreading codes in a juxtaposed sequence where M is the number of the data modulations in the sequence and N is the number of the spreading codes in the sequence,

a plurality of multipliers each constructed to combine the transmitted data and an individual one of the ~~data~~ spreading codes to provide an output representative of the combination,

a plurality of integrators each operatively coupled to an individual one of the multipliers[[,]] to integrate over a particular period of time the output from ~~an~~ the individual one of the multipliers,

a plurality of squaring stages each operatively coupled to ~~an~~ the individual one of the integrators for squaring the output of the individual one of the integrators, and

a comparator responsive to the outputs of the squaring stages for selecting the individual one of the squaring stages with the largest output and operatively coupled to the integrators for selecting for its output the output of the individual one of the integrators operatively connected to the individual one of the squaring stages.

69. (Original) Apparatus as set forth in claim 68 wherein the data has been spread by N spreading codes in accordance with instructions from the receiver[[,]][[.]] the apparatus including:

a de-spreader for restoring the data to the form at the transmitter before the spreading at the transmitter by the N spreading codes.

70. (Original) Apparatus as set forth in claim 68 wherein the data has been modulated by M data modulations in accordance with instructions from the receiver, the apparatus including:

a demodulator for restoring the data to the form at the transmitter before the modulation at the transmitter by the M data modulations.

71. (Original) Apparatus as set forth in claim 68 wherein the data has been punctured in a particular pattern at the transmitter, in accordance with instructions from the receiver, to eliminate portions of the data, the apparatus including:

a de-puncturer for restoring at the receiver the portions of the data eliminated at the transmitter.

72. (Original) Apparatus as set forth in claim 68 wherein the data has been interleaved at the transmitter,

the apparatus including

a de-interleaver for returning the data at the receiver to the form at the transmitter before the interleaving of the data.

73. (Currently amended) Apparatus as set forth in claim 6[[~~2~~]][[8]] wherein the data has been encoded at the transmitter to identify the channels in which the data appears:

the apparatus including:

a decoder for returning the data at the receiver to the form at the transmitter before the encoding of the data by the encoder.

74. (Original) Apparatus as set forth in claim 69 wherein the data has been modulated at the transmitter in accordance with instructions from the receiver and has been interleaved at the transmitter and has been punctured with a particular pattern at the transmitter, in accordance with instructions from the receiver, to eliminate portions of the data and has been encoded at the transmitter, in accordance with instructions from the receiver, to identify channels in which the data is provided, the apparatus including:

a demodulator at the receiver for restoring the data to the form at the transmitter before the modulation at the transmitter by the M data modulations,

a de-interleaver at the receiver for returning the data at the receiver to the form at the transmitter before the interleaving of the data,

a de-puncturer at the receiver for restoring at the receiver the portions of the data eliminated at the transmitter, and

a decoder for returning the data at the receiver to the form at the transmitter before the encoding of the data by the encoder.

PLEASE ADD THE FOLLOWING NEW CLAIMS:

75. (New) A method as set forth in claim 14 wherein

the combination constitutes the product of the selected one of the data modulations in each sequence and the selected one of the N spreading codes in each sequence.

76. (New) A method as set forth in combination in claim 12 wherein

the combination constitutes the product of the selected one of the M data modulations and the selected one of the N spreading codes.

77. (New) A method as set forth in claim 12 wherein

the combination constitutes the product of the selected one of the M data modulations and the selected one of the N spreading codes.

78. (New) A method as set forth in claim 14 wherein

the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the next alternate sequence of the spreading codes are in parallel and wherein

the combining is defined by the product of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the next alternate sequence of the spreading codes in parallel.

79. (New) A method as set forth in claim 78, including the steps of

providing at the receiver successive combinations of the selected ones of the M data modulations in each data modulation sequence and the selected ones of the N spreading codes in the next alternate sequence of the spreading codes, and

identifying the combinations received at the receiver of the selected ones of the M data modulations in each data modulation sequence and the selected ones of the N spreading codes in each alternate sequence of the spreading codes.

80. (New) A method as set forth in claim 79 wherein

each combination of the selected data modulation and the selected spreading code is subjected to correlation factors to identify the combination and wherein

the spreading code in each received combination is despread after the identification of the received combination and wherein

each received combination of the modulated data and the spreading code is demodulated after being despread and wherein.

each combination of the selected data modulation and the selected spreading code is passed through a plurality of matching filters, each having individual characteristics, to identify the characteristics of the combination in accordance with the characteristics of the filter through which the combination passes and wherein

the spreading code in each received combination is despread after the identification of the combination and wherein

each received combination of the selected data modulation and the selected spreading code is demodulated after being despread.

81. (New) In a method as set forth in claim 21 wherein

the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence constitutes the product of the selected one of the M data modulations and the selected one of the N spreading codes.

82. (New) In a method as set forth in claim 81 wherein

correlation techniques are used to identify, from the combinations of the M data modulations in the data modulation sequence and the N spreading codes in the spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the spreading code sequence

the received data is multiplied by each individual one of the N spreading codes in the correlation techniques and wherein

the individual ones of the products are integrated with time and wherein

the individual ones of the integrated products are squared and wherein

the combination of the selected one of the M data modulations in each data modulation data sequence and the selected one of the M spreading code in each spreading code sequence is identified by the highest value in the squaring of the integrated products.

83. (New) Apparatus as set forth in claim 80 wherein

the combining of the selected one of the data modulations in the sequence and the selective one of the M spreading codes in the sequence constitutes the product of the selective one of the data modulations and the N spreading codes.

84. (New) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing successive sequences of a plurality of modulation symbols for the data,

providing a spreading code for the data,

providing a parallel presentation of each of the modulation symbols for the data and the spreading code for the datam and

combining each of the parallel presentations to provide signals representation of the presentations.

85. (New) A method as set forth in claim 84 wherein

the combination constitutes the product of each of the modulation symbols for the data and the spreading code for the data.

86. (New) A method as set forth in claim 85, including the step of:

selecting the product of successive ones of the modulations in each sequence and the spreading codes with juxtaposed sequences, and

transmitting the successive ones of the products to the transmitter.

87. (New) A method of transmitting data from a transmitter to a receiver, including the steps of:

providing input signals,

mapping the input signals with a number of binary bits,

providing a spreading code,

modulating the input signals from the mapper with reiterative sequences of M modulations where M indicates a number of different modulations,

selecting each successive one of the M modulations on a reiterative basis, and

combining each successive one of the M modulations and the spreading code.

88. (New) A method as set forth in claim 87, including

multiplying the combination of each successive one of the M modulations and the spreading code.

89. (New) A method as set forth in claim 88 wherein

each successive one of the M modulations is presented in parallel with the spreading code and wherein

the parallel presentation of each successive one of the M modulations and the spreading codes is multiplied, and wherein

the product of each successive one of the M modulations and the spreading code is transmitted to the receiver.

90. (New) In a method of receiving and processing data from a transmitter, the steps of:

receiving at a receiver signals transmitted from the transmitter and constituting a combination of a selected one of M data modulations in a data modulation signals and a spreading code where M indicates the number of data modulations,

identifying, from the combinations of the M data modulations in the data modulation sequence and the spreading code, the combination of the selected one of the M data modulations in the data modulation sequence and the spreading code, and

despreading and demodulating the combination of the selected one of the M data modulations in the data modulation sequence and the spreading code.

91. (New) In a method as set forth in claim 90 wherein

correlation techniques are used to identify, from the combinations of the M data modulations in the data, modulation sequence and the spreading code, the combination of the selected one of the M data modulations in the data modulation sequence and the spreading code.

92. (New) In a method as set forth in claim 90 wherein

matched filter techniques are used to identify from the combination of the M data modulations in the data modulation sequence and the spreading code, the combination of the selected one of the M data modulations in the data modulation and the spreading code.

93. (New) A method of transmitting data from a transmitter to a receiver, including the steps of:

encoding data in accordance with instructions from the receiver,

puncturing the data in accordance with instructions from the receiver,

interleaving the punctured data,

modulating the interleaved punctured data with a selected one of M data modulations in a data modulation sequence in accordance with instructions from the receiver,

combining the selected one of the M data modulations in the data modulation sequence and a particular spreading code, and

transmitting the combination of the selected one of the M data modulations in the data modulation sequence and the particular spreading code to the receiver.

94. (New) A method as set forth in claim 93 wherein

the combination constitutes the product of the selected one of the selected one of the M data modulations in the data modulation sequence and the particular spreading code.

95. (New) A method of transmitting data and receiving the data at a receiver, including the steps of:

providing the data at the transmitter,

providing a sequence of M data modulations in accordance with instructions from the receiver where M indicates the number of data modulations in the sequence,

providing a spreading code in accordance with instructions from the receiver,

pairing in parallel successive ones of the sequences of the M data modulations and the spreading a code,

selecting from the parallel pairs an individual one of the pairing of the M data modulations and the spreading code,

combining the M data modulation and the spreading code in the selected pair, and

transmitting to the receiver the combination of the M data modulation and the spreading code in the selected pair.

96. (New) A method as set forth in claim 95 wherein

the combination of the M data modulation and the spreading code in the selected pair constitutes the product of the M data modulation and the spreading code in the selected pair.

97. (New) A method as set forth in claim 96, including the steps of:

receiving at the receiver the product of the M data modulation and the spreading code in the selected pair, and

identifying at the receiver the product of the data modulation and the spreading code in the selected pair.